

## **REMARKS**

Claims 1-24 remain pending in the application. Reconsideration is respectfully requested in light of the following remarks.

### **Specification:**

The examiner requested that the status of related U.S. applications and patents, and foreign application referenced in the specification be updated. Applicant notes that the status of the referenced applications and patents has not changed. Accordingly, no amendments to the specification have been made in this regard.

### **Title:**

Section 4 of the Office Action objected to the title of the invention as being non-descriptive. Accordingly the title of the invention has been amended to be clearly indicative of the invention to which the claims are directed.

### **Drawings:**

Section 5 of the Office Action requested that figures 11, 11A, and 13-17 be amended to include additional descriptive labels. Accordingly, the cited figures have been so amended, and replacement sheets including these figures are attached hereto.

### **Double Patenting:**

Section 8 of the Office Action provisionally rejects claims 1-24 under the judicially created doctrine of obviousness-type double patenting. Applicants have submitted herewith a Terminal Disclaimer to overcome this rejection.

### **Section 102(b) Rejections:**

Section 10 of the Office Action rejected claims 1-2 and 12 under 35 U.S.C. § 102(b) as being anticipated by Bannon et al., U.S. Patent Number 5,987,544, (hereinafter “Bannon”). The Applicants respectfully traverse.

Claim 1 recites “A dirty memory subsystem for a computer system, the dirty memory subsystem comprising storage operable to store redundant copies of dirty indicators, each dirty indicator being associated with a respective block of main memory and being settable to a predetermined state to indicate that the block of main memory associated therewith has been dirtied”.

Bannon, column 4, lines 43-47, describes a duplicate tag store 28, which “contains bits corresponding to valid, shared and dirty for each tag address entry. By providing a provision for storing dirty bits in the duplicate tag store, less interrupts are necessary to determine the complete status of a block of data in the BCACHE 24”. At column 4, lines 62-65, a “processor 13a reads the other processors 13b, 13c duplicate tag stores 28b, 28c to determine if the block desired by the requesting processor 13a is resident in the processors 13b, 13c backup cache” 24 and its status. And at column 3, lines 49-56, “This improves system performance since the processor bus and processor are not occupied with unnecessary tasks such as informing other processor of the status of its higher level caches. Moreover, by providing a separate index bus to the backup cache the index bus can be used to continue to process requests from the processor for private reads and writes”.

While multiple copies of dirty bits appear to be disclosed in Brannon, these copies do not constitute redundant copies, as recited in claim 1. This is because each copy of the tags containing the dirty bits serves a different purpose, which is essential to the primary function of the system. Tags in the BCACHE are used by the processor for instruction execution. Tags in the duplicate tag store are provided to inform other processors of the status of tags in the BCACHE. The loss of either of these sets of tags would prohibit the execution of code by one or more of the processors.

Since Bannon neither teaches nor suggests the provision or use of redundant copies of dirty indicators, as recited in claims 1 and 12, these claims are believed to patentably distinguish over Bannon. Since claim 2 depends from claim 1, is believed to patentably distinguish over Bannon for at least the reasons given above with regard to claim 1.

**Section 103(a) Rejections:**

Section 12 of the Office Action rejected claims 3-10 and 13-14 under U.S.C. § 103(a) as being unpatentable over Bannon in view of Garnett, U.S. Patent Number 5,991,900, (hereinafter "Garnett"). Section 13 of the Office Action rejected claims 15-23 under U.S.C. § 103(a) as being unpatentable over Garnett in view of Bannon. The Applicants respectfully traverse.

In section 13 of the Office Action, the Examiner acknowledges that Garnett does not disclose redundant copies of dirty indicators. As described above, Bannon is also silent with regard to this feature. Accordingly, it is believed that claims 3-10 and 13-23 patentably distinguish over Bannon and Garnett taken either singularly or in combination.

Section 14 of the Office Action rejected claim 11 U.S.C. § 103(a) as being unpatentable over Bannon in view of Watt, U.S. Patent Number 6,272,033, (hereinafter "Watt"). The Applicants respectfully traverse.

Watt, column 2, lines 12-27, describes a system in which global or large-scale changes to the status of a plurality of data words may be made by changing relatively few status bits without having to individually change every status bit for each corresponding data word. Watt does not disclose redundant copies of dirty indicators. As described above, Bannon is also silent with regard to this feature. Accordingly, it is believed that claim 11 patentably distinguishes over Bannon and Watt taken either singularly or in combination.

Section 15 of the Office Action rejected claim 24 under U.S.C. § 103(a) as being unpatentable over Garnett in view of Bannon in further view of Watt. The Applicants respectfully traverse.

In section 13 of the Office Action, the Examiner acknowledges that Garnett does not disclose redundant copies of dirty indicators. As described above, Bannon is also silent with regard to this feature. Watt, column 2, lines 12-27, describes a system in which global or large-scale changes to the status of a plurality of data words may be made by changing relatively few status bits without having to individually change every status bit for each corresponding data word. Accordingly, it is believed that claim 24 patentably distinguishes over Garnett, Bannon, and Watt taken either singularly or in combination.

## CONCLUSION

Applicants submit the application is in condition for allowance, and notice to that effect is respectfully requested.

If any extension of time (under 37 C.F.R. § 1.136) is necessary to prevent the above referenced application from becoming abandoned, Applicants hereby petition for such extension. If any fees are due, the Commissioner is authorized to charge said fees to Meyertons, Hood, Kivlin, Kowert, & Goetzel, P.C. Deposit Account No. 501505/5500-68600/BNK.

Also enclosed herewith are the following items:

- ☒ Return Receipt Postcard
- ☐ Petition for Extension of Time
- ☐ Notice of Change of Address
- ☐ Fee Authorization Form authorizing a deposit account debit in the amount of \$  
for fees (      )
- ☒ Replacement Drawing Sheets for Figures 11, 11A, and 13-17.

Respectfully submitted,



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